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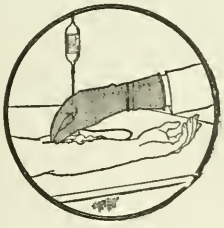

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STUDIES IN EXPERIMENTAL PNEUMONIA.

BEATY, F. G., AND CECIL, R. L. (*Jour. Exp. Med.*, October, 1920) state that:

1. Pneumonia has been consistently produced in normal monkeys by intratracheal injection of Streptococcus hemolyticus.

2. The pneumonia produced has been shown to be comparable with hemolytic streptococcus pneumonia in man with respect to its clinical features, complications, and pathology.

3. Two pathologic types of the disease have occurred, interstitial pneumonia and confluent lobular pneumonia. Both types have been found in the same animal.

4. The type of pneumonia has appeared to be dependent upon the amount of streptococcus culture injected, interstitial pneumonia following the injection of small amounts and being an expression of considerable resistance, confluent lobar pneumonia following the injection of large amounts and being an expression of comparative lack of resistance.

5. Study of the distribution of streptococci in the lungs and of the character of the lesions in early stages of the disease has shown that streptococci may primarily invade the pulmonary tissue by penetration of the walls of the larger bronchial branches and that they are distributed from the points of invasion by way of the peribronchial, perivascular and septal interstitial tissue and lymphatics. Infection of the alveoli is likewise primarily an interstitial invasion of the alveolar walls by streptococci.

6. In one experiment it was found that preliminary injury to the respiratory tract by gassing with chlorine and that lowering of resistance by a preceding intraperitoneal injection of Bacillus influenzae without local injury to the respiratory tract greatly facilitated invasion of the lungs by Streptococcus hemolyticus.

7. A normal monkey inoculated in the nose and throat with Streptococcus hemolyticus failed to develop pneumonia and showed no evidence of infection of the upper respiratory tract.

They draw the following conclusions:

1. Streptococcus hemolyticus can produce a primary pneumonia in monkeys when injected intratracheally in sufficiently large amounts.

2. It readily produces an extensive secondary pneumonia in monkeys when injected intratracheally in small amounts.

3. Invasion of the lungs by Streptococcus hemolyticus in streptococcus pneumonia in monkeys is primarily by way of the interstitial framework of the lung and its lymphatics, and the disease does not appear to be primarily an infection of the terminal bronchioles.

4. Although it seems probable that invasion of the lungs by Streptococcus hemolyticus in streptococcus pneumonia in man may be by the same paths it is unsafe to draw this conclusion without qualification, since streptococcus pneumonia in man commonly occurs only as a secondary infection in the presence of a preceding inflammatory bronchitis.

[E. H. R.]

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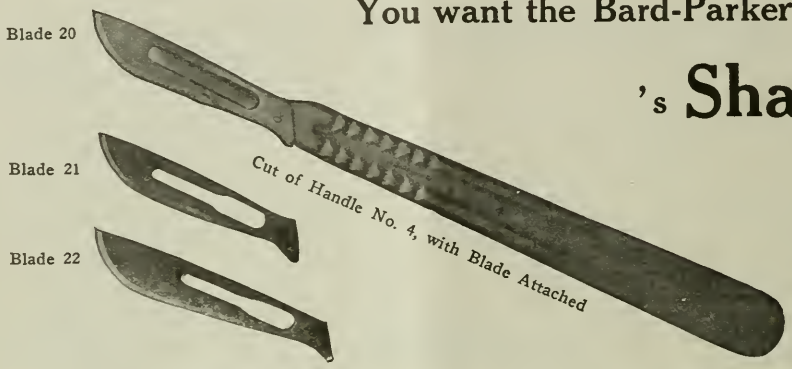

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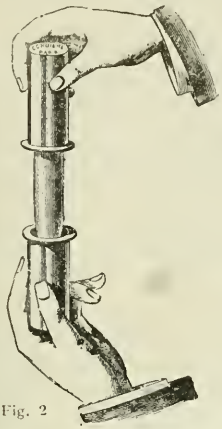

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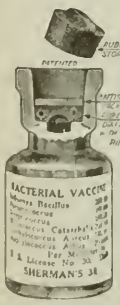

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THE CLINICAL RECOGNITION OF THE VARIOUS TYPES OF PAROXYSMAL RAPID HEART ACTION.

BY SAMUEL A. LEVINE, M.D., BOSTON,

Assistant in Medicine, Harvard Medical School.

[From the Medical Clinic of the Peter Bent Brigham Hospital.]

PAROXYSMAL rapid heart action includes those conditions in which the heart suddenly takes on a new rhythm, beating rapidly and regularly or sometimes irregularly. The beginning and ending of such attacks almost always occurs instantaneously, that is, in one or a few heart cycles the rhythm changes. Such attacks vary in duration from several seconds to several weeks. The proper diagnosis of these conditions is best made if they are observed during the attacks although frequently one has to depend entirely on the history because of the transient nature of the upsets and the impossibility of catching the patient while the abnormal rhythm is present. It therefore becomes extremely important to question the patient concerning the nature of the attacks. They may complain of periods of palpitation, of "fluttering of the heart," of "pounding or thumping of the heart," that the heart "runs away," or "the heart beats very fast," and so forth. If the story is that the heart gradually accelerated from the normal rate to the rapid rate, it is quite certain that the condition is not a true paroxysmal tachycardia; the same is true if the heart gradually quieted down. People frequently have periods of palpitation or vigorous heart action from conscious or unconscious emotions through the extra cardiac nervous mechanism wherein the heart rate gradually accelerates. Here the rhythm is normal but rapid, and it should be called normal tachycardia and be distinguished from the paroxysmal types.

It is the purpose of this paper to discuss how normal tachycardia can be distinguished from the paroxysmal rapid heart action and to differentiate the various types of the latter where that is possible, with such simple means as we all have at the bedside, and to touch upon the indications for the proper treatment of the various paroxysms.

Paroxysms of tachycardia may have their origin in three different parts of the heart, that is, in the auricles, in the ventricles and in the junctional tissue between the two (auriculoventricular node). The latter is so extremely rare and impossible to be recognized without special graphic means that it will not be considered in this discussion. Paroxysms arising in the auricles are subdivided into three types.

paroxysmal auricular tachycardia (the most common condition met clinically), *paroxysmal flutter*, and *paroxysmal fibrillation*. It is important to try to distinguish one type from the other for their behavior is different and frequently the exact diagnosis can be made at the bedside without any elaborate aid. Fortunately most paroxysms end without producing any permanent damage to the patient, but occasionally it may be a question of life and death or a matter of the loss of a limb and then the recognition of the exact condition and the institution of the proper treatment becomes urgent.

Let us assume that we have a patient whose heart is beating rapidly and regularly at the rate of 170. It is first necessary to know whether it is a normal or an abnormal tachycardia. The history of the onset of the attack or similar previous attacks as mentioned above is important. The condition may be a normal acceleration due to some infection, or nervous influence or hyperthyroidism. One should count the apex rate carefully for 60 seconds, and repeat this in five or ten minutes. The counts will either be exactly the same or not vary more than two beats if we are dealing with an abnormal tachycardia. It must be emphasized that in counting there need be no greater error than two beats; one, as the second hand of the watch crosses the starting point and the other, at the last second of the minute. If the two counts taken as above differ by three or five or more beats, it is not apt to be an abnormal tachycardia. This very simple procedure has been of great help in diagnosis. It is surprising how constant is the rate of a regular abnormal tachycardia from minute to minute, sometimes even from day to day, and from one attack to another over the course of many months. If the condition of the patient permits it, one can try to influence the heart rate by changing from a reclining to an upright position or having the patient hold a deep inspiration. None of these procedures will alter the minute count more than a few beats if it is an abnormal regular tachycardia, and will change it more markedly if it is a normal acceleration.

By the above means one decides whether the heart mechanism is normal or abnormal. If the rhythm is regular and rapid, and it appears to be abnormal, the condition may be paroxysmal auricular tachycardia or paroxysmal auricular flutter. (Ventricular tachycardia will be considered below). In auricular flutter the auricular rate will be twice the rate one counts at the apex; that is, if the apex count is 170, the auricles may be contracting at a rate of 170, in which case it is auricular tachycardia; or they may be contracting at twice the rate, or 340, in which case it is auricular flutter. In fact there is practically always some degree of block associated with auricular flutter although the ventricular rate may not be regular. However, when cases of flutter are first seen, especially if they are of the paroxysmal type, they are very apt to have a 2 : 1 block. This results in a perfectly regular and rapid apex rate. It is generally possible to distinguish the regular rate of flutter from that of tachycardia. Although both remain perfectly fixed with change in position of the patient from a recumbent to an upright position, and the count will continue constant from minute to minute, vagal stimulation affects the two conditions quite differently. In the case of auricular tachycardia, pressure on the vagus nerve* or ocular pressure will have no influence at all or it will end the attack completely. There is practically never any slowing of the rate unless the attack ends. Very rarely the rapid rate is resumed after several seconds and leaves one in doubt whether the attack was stopped at all, or whether there was only a temporary slowing. There is sufficient graphic proof that the latter occurs with such rarity that it can be ignored in ordinary work. On the other hand, it is generally possible to slow temporarily the ventricular rate in cases of flutter by vagal pressure, but there is no known instance of ever ending an attack by this procedure. During the vagal stimulation if one auscults simultaneously one hears the ventricular rate become slow, or at any rate the rapid rhythm is disturbed or may become irregular. One may therefore conclude that if the attack is completely arrested it is one of paroxysmal auricular tachycardia and if it is temporarily disturbed it is auricular flutter; but if it is not influenced at all, as may happen in either condition, one is still in doubt.

A further simple test is of great help in distinguishing these conditions, and that is the

* Pressure is applied over the left or right carotid artery rather vigorously against the cervical vertebrae, entirely obliterating the flow of blood through the corresponding carotid artery and is generally maintained for 5 to 10 seconds.

actual rate of the heart. If the apex is counted at any regular rate from 185 to 205, the condition cannot be auricular flutter but must be one of tachycardia, for if it were flutter, the auricles would have to be beating at twice that rate, or 370 to 410. This is a much more rapid auricular rate than one finds in flutter, the general lower and upper limits of which are 250 and 350. (I have observed one case of flutter with an auricular rate as low as 208 and another as high as 358). Given a case with a regular apex rate of 190, therefore, it can be no other condition than paroxysmal tachycardia.

Finally it is necessary to recognize the attacks of paroxysmal auricular fibrillation. This condition is much more common than has been generally believed. Auricular fibrillation should no longer be called "perpetual arrhythmia," for in recent years the transient form has been observed under numerous varied circumstances; during acute infections like pneumonia and rheumatic fever, during digitalis therapy, in cases of hyperthyroidism, during convalescence from a surgical operation, in chronic cardiac patients especially in those who eventually develop the permanent form of the arrhythmia, and even in otherwise healthy people. The diagnosis is made in the same way as the permanent type of the arrhythmia. The rate is apt to be moderately rapid, about 160, and grossly irregular. At times the beats may come in such rapid sequence that they may appear to be regular; however, on more prolonged examination irregularities will appear. There will be a pulse deficit, that is, a lower radial than apex count because some of the beats will fail to reach the wrist. Too much reliance must not be put on the presence of a pulse deficit. It is thought by some to be present in no other conditions than auricular fibrillation. This is far from the truth as in all types of paroxysmal rapid heart action it may be impossible to count as many beats in the radial artery as over the precordium. In these latter conditions the pulse deficit is brought about or accentuated by the phasic variation of the strength of the pulse wave resulting from respiratory movements, and partly by an alternation of the pulse which frequently accompanies the attack. Repeated apex counts of the heart rate at short intervals during paroxysms of auricular fibrillation will show distinct differences unlike the other types of paroxysmal rapid heart action. In one case, a minute count of the apex was 163 and five minutes later it was 157. Vagal stimulation may temporarily slow the ventricular rate but will not stop an attack of paroxysmal auricular fibrillation. It may be said that in general one will not find it difficult to recognize paroxysmal auricular fibrillation using the same criteria that enable us to diagnose the permanent type of this arrhythmia.

So far we have not considered paroxysmal tachycardia of ventricular origin. This condition is very much more rare than the auricular type and cannot be recognized except by electrocardiograms. These attacks are very apt to be short, rarely lasting more than several hours, but are generally associated with serious myocardial disease. The prognosis is rather grave. In the few that I have seen the rhythm has been rapid and apparently regular, but on very careful attention either while listening to the heart beat or on measuring the heart cycles in the graphic tracings one can detect slight variations which do not exist in paroxysmal auricular tachycardia. Furthermore, there is no known instance of arresting an attack of ventricular tachycardia by vagal stimulation. These few points might lead one to suspect ventricular tachycardia at times and might enable one to rule it out at other times, but final proof of its occurrence cannot be made without graphic means.

In recapitulation, one can see that by using such simple means as an accurate count of the apex rate and the pulse rate repeated under different circumstances and observing the effect on the heart of pressure on the vagus nerve or over the eye ball, and of holding a deep inspiration, it will often be possible to determine whether a rapidly beating heart has a normally accelerated mechanism or whether it is one of the various abnormal paroxysmal conditions: furthermore, it will be possible in many cases to distinguish the various types of abnormal tachycardias (See table). It is important to try to distinguish the various forms of paroxysmal rapid heart action because the treatment will depend upon the correct diagnosis. Furthermore, occasionally it becomes extremely urgent to stop an attack if possible, particularly as happened in one of our cases while a surgical operation was being performed and as in another who lost his arm from dry gangrene dur-

ing a previous attack. Vagal stimulation by direct pressure over the carotid artery or by ocular pressure will end one type of paroxysmal rapid heart action and not the others, while proper digitalis therapy will control the course of paroxysmal auricular flutter and auricular fibrillation.

In treating the various types of paroxysmal rapid heart action it must be borne in mind that many of them come and go, do no harm, disturb the patients only slightly, and keep recurring over a period of many years. This is particularly true of paroxysmal auricular tachycardia which condition frequently exists in otherwise normal people. However, at times the attack precipitates the patient into a very serious state and threatens the life of the patient. One such case developed an attack while under anesthesia and it seemed to the surgeons that she might die on the operating table. Another patient lost his left arm from dry gangrene during an attack, was aphasic for several months during a second, and had a complete hemiplegia during a third before he was observed by me. In both of these two cases vagal stimulation was successful in ending the attacks. The first one was arrested by direct pressure over the carotid artery, and the second by ocular pressure. In general it may be said that repeated attempts should be made to stop the attacks of paroxysmal auricular tachycardia by one or another of the means of vagal stimulation, that is, holding a deep inspiration, pressure over the carotid arteries or ocular pressure. In more than half of such cases I have been able to restore the normal heart rhythm. Heart drugs will prove of very little assistance in such patients. They should remain in a recumbent position during the attack unless it is very mild and does not disturb them at all.

Paroxysms of auricular flutter and auricular fibrillation are more apt to occur in people who have some disease of the heart. If the clinical condition of the patient is embarrassed by these attacks digitalis should be given, because although they may only last several hours or a few days if untreated, they are apt to recur, in which case digitalis will prepare the heart for subsequent attacks and will prevent a marked acceleration of the ventricle which would otherwise result. Furthermore, some cases will show signs of marked cardiac failure during such attacks and they are to be treated like any decompensated cardiac patient. Great improvement is to be expected, however, because digitalis has a specific action in diminishing the ventricular rate in these two forms of abnormal rhythm. The treatment of attacks of ventricular tachycardia is not so gratifying. Prolonged rest in bed is essential and digitalis in moderate doses over a long time seems to be of some value. The ultimate prognosis of this type, however, is grave.

SUMMARY.

It is possible to distinguish the various types of paroxysmal rapid heart action (paroxysmal auricular tachycardia, paroxysmal auricular fibrillation and paroxysmal auricular flutter) one from each other and from normal acceleration by simple means that all physicians have with them at the bedside in the majority of instances. The points involved in the differential diagnosis are discussed and the importance of vagal stimulation as a life saving measure in rare instances is emphasized. The proper treatment of the various types of paroxysms will depend on the correct differentiation of the abnormal mechanism.

Type of Paroxysmal Attack	Rhythm	Apex Rate	Effect of Vagal Pressure	Treatment
Auricular tachycardia	Regular	140-250 ±	Attack ends or no effect	Vagal stimulation
Auricular flutter	Regular or regularly irregular	140-175 ±	Temporary slowing, attack never ends	Digitalis
Auricular fibrillation	Absolutely irregular	150-200 ±	Temporary slowing, attack never ends	Digitalis
Ventricular tachycardia	Essentially regular	175 ±	None	General cardiac procedures

MEDICAL COMPLICATIONS FOLLOWING SURGICAL OPERATIONS.*

By William E. Preble, M.D., Boston.

It is with some hesitation and all due modesty that I venture to address this Society, many of whose members are surgeons, on a subject that at first thought seems well within the jurisdiction of the surgeon, rather than that of the internist. My excuse is a desire to call attention to some of the factors following surgical operations that are sometimes, I fear, lost sight of, because of the greater attention given to the operation itself, and its more immediate consequences. It has sometimes seemed to me that a little more care in regard to the condition of the patient before operation, and to his comfort, both before and after the operation, would be conducive to a minimum of suffering and a maximum of recoveries.

POST-OPERATIVE NAUSEA AND VOMITING.

I will first consider the nausea and vomiting that to a greater or less degree are almost inevitable sequellae of major operations performed under a general anesthetic, such as ether or chloroform. There are various causes for this rather distressing complication, and the treatment varies with the cause.

1. The first and commonest type is caused by the direct irritation of the gastric mucosa by the anesthetic, and the consequent stimulation of the vomiting centre through the vagus nerve. This type is not serious, as a rule, and should be relieved in a few hours. Water, or water with a little bicarbonate of soda added, should be given freely. The patient is usually thirsty, and likes the water, and the vomiting paroxysm is less violent if there is something in the stomach to evacuate. Vomiting of this type should cease in a very short time, probably an hour or two at most.

2. Another cause of post-operative vomiting following laparotomies is too much handling of the abdominal viscera. Scudder has said that the organs should always be handled as gently as though the patient were conscious. The treatment of this type of vomiting is obviously prophylaxis.

3. A third cause of very violent long-continued, and sometimes almost uncontrollable vomiting is the lowering of the alkali reserve and increase of the H-ion concentration in the blood. This condition is commonly called an acidosis. It is of such common occurrence and so important a factor that I shall consider the condition in some detail a little later.

4. A fourth case of persistent vomiting is an acute dilatation of the stomach and small bowel, the so-called paralytic ileus. Too deep or too long-continued anesthesia, too much trauma to the stomach and bowel, acidosis, and surgical shock are some of the etiological factors. The vomiting in these cases is very frequent, usually in small amounts, and the paroxysms are not very violent. The patient is much prostrated. He looks sick. The treatment is prophylactic as far as the anesthesia and the operation itself are concerned. The immediate treatment is gastric lavage early and often. Pituitrin hypodermically or intravenously is indicated. Adrenalin is also recommended by some authorities. It is of the utmost importance to diagnose this condition early, as delay in treatment is frequently fatal.

5. Other causes of persistent vomiting that should be considered in certain cases are: uremia in chronic nephritis, induced by the shutting down of the kidneys because of irritation by ether or chloroform; mechanical stimulation of the vomiting centre in certain head injuries; direct stimulation of the vomiting center by the anesthetic; and visceral ptosis as a condition which for some reason is conducive to post-operative vomiting.

I will also merely mention strictly surgical accidents, such as obstruction or partial obstruction caused by adhesions or the catching of a loop of bowel in the wound.

A partial obstruction, especially if it is high up, may cause persistent and uncontrollable vomiting without giving the classical picture of obstruction. In these cases, diagnosis must be made by exclusion.

I want again to emphasize the point that in all cases of post-operative vomiting lasting more than a few hours, early diagnosis of the cause is of the utmost importance.

SURGICAL SHOCK.

So much has been written in the past few years about surgical shock, and so many different theories have been advanced that any attempt to give even a complete résumé of the subject would take much more space than could be given in a paper of this kind. I will men-

* Read before the Portsmouth, N. H., Medical Society, Oct. 5, 1920.

tion some of the later theories, and point out certain conditions that are considered by most authorities to be conducive to or causative of shock. Yandel Henderson's[1] theory of a lack of carbon dioxide in the blood as the cause of shock does not satisfy the known conditions. Cannon[2] in 1917 made a careful study of the known factors in shock that deserves mention. He assumes a stimulation of the vaso-motor centre by deficient circulation in the brain which causes a constriction of the peripheral arterioles. This forces the blood into the splanchnic system and it is trapped in the portal system between two sets of capillaries—that of the stomach, bowels, pancreas, etc., on the one side, and the capillaries of the liver on the other. Here the blood-pressure is so low that the blood is not forced through again into the peripheral circulation, and the patient bleeds into his own veins. The problem is to get the blood out of the portal system into the peripheral system. None of the ordinary stimulants have any effect. Porter[3], besides other valuable work on shock, evolved a new method of treatment. He makes use of carbon dioxide as a respiratory stimulant, increases the action of the respiratory muscles, and makes the patient pump the blood out of the portal system by increasing the negative pressure in the thorax. The CO_2 is administered by putting a box over the patient's head, and introducing the gas until the patient's respiratory rate is doubled, and his blood-pressure raised above the danger point. Still another theory advanced by Cannon as a result of his war experience is that some poison is formed in traumatized tissue that is carried through the blood and causes a toxemia which causes shock. It was noticed that soldiers wounded, for example, in the leg, would arrive at the hospital with a tourniquet on, and show no symptoms whatever of shock. As soon as the tourniquet was removed, they would promptly show symptoms of shock. Experimental work with rabbits seemed to confirm the truth of this theory.

CRILE'S THEORY.

Crile[4] has recently published a monograph on surgical shock that merits considerable attention. He considers that shock is merely a form of exhaustion, and is due to over-stimulation of the brain cells by excessive stimulation through the afferent nerves. This excessive stimulation may occur in a variety of ways, as from fear, anxiety, over-exertion, prolonged exposure to cold, starvation, trauma, infection, anemia, overproduction or excessive use of thyroid or adrenalin, etc. Inhalation anesthesia, and the trauma of the operation, are important factors. Definite pathological changes are found in the cells of the brain, liver, and adrenals, and these changes can be produced experimentally in animals. The changes are identical with those produced by exhaustion from any cause. Shock, then, has divers causes, or may be the end result of a summation of many contributing causes. There is an acute acidosis in every case of shock.

TREATMENT OF SURGICAL SHOCK.

Crile says that experiments prove that none of the drugs ordinarily used as stimulants are of any use either as preventive or curative agents in shock, and that strychnine is actually conducive to shock, and in large doses will produce it. A 1-50000 solution of adrenalin administered continuously intravenously, 3 c.c. per minute, will usually maintain blood-pressure, but adrenalin in excess causes exhaustion,—and furthermore this treatment is impracticable.

Crile's treatment is under two headings: (1) Combat existing causes of exhaustion, and (2) Induce sleep, as sleep will repair the damage done to the brain cells, provided it is not too severe.

Under the first heading the measures are mainly prophylactic, and aim to eliminate factors conducive to shock, such as fatigue, worry, fear of operation, excess of anesthesia, malnutrition, acidosis, etc. If shock is actually present, combat the various causes expectantly,—

(1) Transfusion for anemia or hemorrhage; (2) keep patient warm; (3) relieve pain and suffering as far as possible, administering morphine, provided there is no cyanosis. This latter point is very important, as *cyanosis* means *acidosis*, and morphine prevents the normal recovery from acidosis, and tends to a persistence of the condition. (4) Thirst is relieved by the administration per rectal drip of a 5% glucose, 5% sodium bicarbonate solution. This also helps relieve the acidosis always present in shock. (5) Fear or anxiety should be overcome by reassurance and attention to little details of comfort. (6) Acidosis is combatted with fresh air, free fluids, oxygen if there is much cyanosis, and glucose-soda solution mentioned above by rectum, or, if necessary, intravenously. If

given intravenously, 500 c.c. every three or four hours, is given.

The second line of treatment aims to quiet the patient and induce sleep, as experiments on animals show that the damage to the brain cells, provided it is not too severe, is repaired during sleep. Reassurance, allaying fear and anxiety, attention to physical comfort, and morphine in rather large doses, provided always there is no cyanosis, are the indications. Nitrous oxide and oxygen may be administered if morphine is contra-indicated.

Crile lays great stress on the kind of anesthesia to use. He says ether and chloroform block the efferent paths, but do not block the afferent; hence, stimuli caused by the traumatism of the operation are transmitted to the brain and tend to produce shock. Nitrous oxide-oxygen anesthesia blocks the afferent paths, as well as the efferent, hence tends to prevent shock. Blocking off the afferent paths by the use of novocain about the field of operation is indicated when ether or chloroform is used. He has shortened his old term, anoci-association, and applies the term *anociation* to his whole system of preventing surgical shock by prophylactic and other measures.

I have devoted considerable time to Crile's theories, because his main contentions are in accord with the work of other men who have studied various phases of this question: Porter's work already referred to; Mann's[8] work on anesthesia and surgical shock; Cannon's ideas as to the inefficacy of the usual drugs; and Mann's experimental work with the various solutions used intravenously; blood or blood serum being the most efficacious, and next to these a hypertonic saline with an alkali, glucose, and a colloid (such as acacia or gelatin) added to keep the solution in the blood vessels.

We would all agree with Crile's ideas as to the importance of preparation before operation and general post-operative care.

ACIDOSIS.

Acidosis, or increased H-ion concentration in the blood and tissues, is a very common and sometimes a very serious post-operative complication. It is the most frequent cause of persistent vomiting, and is apparently always an important factor in surgical shock. The condition is frequently unrecognized, perhaps because we have been accustomed to diagnose acidosis by the odor of acetone on the breath or its presence in the urine. The presence of acetone and diacetic acid in the blood or urine are indicative of but one variety of acidosis. Indeed, I know of no simple bedside test by which we can infallibly diagnose acidosis. Increased respiratory rate, thirst, abnormally acid urine, and persistent vomiting without other obvious cause should make us consider the presence of an acute acidosis probable.

Our normal blood and tissue reaction is alkaline. It is impossible to live with an actually acid blood,, and Nature has provided a very efficient mechanism for maintaining the H-ion concentration at a very constant level.

Whitney[6] gave a very readable summary in an article published in the BOSTON MEDICAL AND SURGICAL JOURNAL in 1917. For more detailed study, see the work of L. J. Henderson,[7] Palmer and Henderson,[8] Marriott and Howland,[9] Peabody,[10] *et al.*

The chief chemical elements involved are the three phosphates, the carbonates and bicarbonates, and free carbon dioxide. The albumins in the blood also tend to check any sudden change in reaction (Robertson[11]). When an excess of acid is thrown into the blood, as from severe exertion, fear, infection, etc., there is a shifting of H-ions, some of the alkalin phosphate becomes acid phosphate, the carbonates become bicarbonates, and some of these in turn drop their alkali radicals and release carbonic acid. This excess of CO_2 in the blood stimulates the respiratory centre, and the extra CO_2 is promptly eliminated through the lungs. The excess of acid phosphate is eliminated by the kidneys, and provided there is not an overwhelming amount of acid thrown into the blood, conditions return to normal in a few hours. It must be remembered, however, that CO_2 first stimulates, then depresses, and then paralyzes the respiratory centre, hence the danger in an acute acidosis.

Nephritics, diabetics, cardiacs with decompensation, patients with active acute or chronic infections of any kind, are almost certain to have some degree of acidosis. If surgery is necessary in these cases, we should remember that fear of the operation, the anesthetic if it be ether or chloroform, the abstinence from food immediately preceding and immediately following the operation, are all conducive to acidosis, and one or more of these factors may prove to be the proverbial last straw that precipitates a fatal acidosis or surgical shock.

TREATMENT OF ACIDOSIS.

The treatment of acidosis includes (1) careful examination of patient before operation, with especial attention to the condition of the heart, kidneys, and respiratory tract. (2) Appropriate dietetic treatment, with free fluids, fruit juices and, if necessary, the exhibition of alkalies before the operation, if the patient comes in the class in which acidosis is known to be present. (3) After the operation, fluids and alkalies must be administered as soon as conditions will permit. Fischer's solution by rectum is a very efficient means of controlling the acidosis. (4) The diet should be laid out so as to give an excess of alkalies rather than acids, bearing in mind that the organic acids of fruits and vegetables increase the alkali reserve, while meats, cereals, and eggs carry an excess of acids. (5) Fresh air, oxygen, if necessary, soda-glucose solution, or Fischer's solution with glucose by rectum or intravenously, if necessary, are the list of valuable weapons in dealing with an acute acidosis.

One last point that should be borne in mind is the danger of giving too much alkali intravenously, if the kidney function is impaired, as a high concentration of salts in the blood may be as dangerous to life as the acidosis.

CHRONIC CATARRHAL COLITIS.

Little is said in medical literature about chronic colitis as a late sequela of laparotomies, especially drained cases, yet it is quite common. The sequence seems to be—adhesions, interference with peristalsis, stasis, irritation of the mucosa, and obstipation. The patient may be constipated, but usually complains of diarrhea or alternating attacks of diarrhea and constipation. Scybala are passed at times, and mucus is found in the stools. Sometimes stools consisting entirely of mucus will be passed, usually preceded by colicky pain. The abdomen is usually tender over the site of the colitis, but there is no spasm. The x-ray shows the location of the trouble, the picture resembling somewhat that of tuberculous colitis.

Treatment includes irrigation of the colon once or twice daily with some non-irritating solution, such as normal saline with a little bicarbonate of soda added, and the exhibition of mineral oil or powdered agar-agar in fairly large doses. If the case is severe, rest in bed for a few days may be necessary. Immediate relief is usually obtained, but the trouble is prone to recur.

MISCELLANEOUS.

If time permitted, there are various other medical complications following surgical operations that might profitably be considered.

The prevention and treatment of the various types of pneumonia—lobar, broncho, embolic, and hypostatic—deserve attention.

Acute oedema of the lungs, lung abscess following tonsillectomy, and the secondary anemia which so often follows a major surgical operation on the elderly patient, all furnish interesting material for consideration, but lack of time forbids further discussion.

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THE BALNEOLOGY OF JAPAN.

By Horace Packard, M.D., F.A.C.S., Boston.

The purpose of this brief article is to give a condensed survey of the mineral springs of Japan, dwelling cursorily upon their relation to volcanic influences; their healing qualities as handed down by tradition; their radio-activity as evidenced by recent tests; and their potentiality for usefulness.

Japan is a land of volcanoes and earthquakes. Happily most of the volcanoes are extinct, there being but seven, widely separated, showing but moderate activities and apparently serving as chimneys, smoke-holes or vents for the subterranean fires which smoulder below.

The province of Hakone which it has been my privilege to examine personally, is an ancient volcanic crater of an area of about sixty square miles. No volcanic activities have been

known here within the memory of man, except a small vent hole in a cleft of the mountains from which pour forth considerable sulphurous vapors in considerable volume, accompanied with a growling sound, and irregular very brief earth tremors of considerable frequency, sometimes with force enough to shake buildings and rattle windows and accompanied with an indescribable grinding noise. These earthquakes have been known to the inhabitants for all time and are given no more thought and less solicitude than a thunderstorm with us.

Originally, far back in geological history this enormous crater of Hakone embraced a lake of large area, now much reduced in size by a deep drainage canyon which the waters of the Hawakawa river have cut through the eastern rim. Along this canyon for a distance of eight or ten miles hot springs crop out in many places and in great volume and some of these yield water at very nearly the boiling point.

About each one of these hot springs has grown up a little native village, the central feature of which is one or more native hotels or inns conducted for the convenience of those who desire to benefit by bathing in the natural hot spring waters. These native inns are very simple in construction, the floors consisting of thick straw mats closely fitted together and yielding a delightful softness to each foot fall, but devoid of all the comforts which appeal to the western world—no general assembly room, no chairs, no beds—each guest sits, eats, and sleeps on the floor, and each leaves his shoes at the door and enters the scrupulously clean hostelry in his stockings. In the first-class inns some of the guest rooms are delightfully artistic with their beautifully-grained selected natural wood finish, latticed windows, and takonomos, which furnish setting for a choice kakamono or exquisite bronze or porcelain ornament.

That there is a deep-seated conviction of the therapeutic value of these springs is evidenced by the vast numbers of Japanese people who flock to them year after year.

Before ever any chemical analyses had been made or tests conducted for radio-activity, fairly definite traditions had fixed the relative therapeutic value of the waters of the various springs.

Coincident with the Panama-Pacific International Exposition held in San Francisco in 1914 a volume* was published by the Government giving a list of all the then known mineral springs of Japan, chemical analysis of their waters and other interesting and valuable information. It is here shown that in Japan, an area less than our State of California, there are more mineral springs of traditional therapeutic value than in all the rest of the world together and the proportion of natural hot springs is greater than anywhere else on earth.

Here in Japan not much attention is bestowed upon cold mineral springs. The warm and hot springs are in great abundance and tradition has clothed them with enhanced virtues. It is estimated that there are more than five hundred hot springs in Japan and more than two thousand cold springs possessing marked mineral and radio-active qualities.

The potentialities of Japan as a balneological world sanitarium are beyond imagination. A range of volcanic mountains runs nearly the whole length of the Japanese archipelago from northeast to southwest for more than two thousand miles. It is mainly along these volcanic mountain slopes that the mineral springs are found. The natural environment of many of these springs is beautiful and interesting beyond words. Here in Hakone the mountain slopes are clothed with forests of cryptomeria and bamboo; nearly every hotel and villa has a cascade or brook or pool of running water; the upper reaches of the mountain are covered with waving billows of silver green bamboo grass, and attractive paths and trails lure to neighboring spring resorts, fascinating waterfalls, interesting ancient temples and viewpoints for glimpses of Fujiyama.

Hot springs are found at all altitudes from sea level to nearly seven thousand feet. At two places, at least, hot spring waters bubble up through the sands of the seashore. Other springs are located so near the sea with mountains sloping down to the water's edge, that the combined attraction of a popular hot spring resort with mountain and seashore scenery give added zest and recreation. In the fastnesses of the mountains are numberless hot spring places so far isolated from lines of travel that few patrons ever reach them from the outside world. Locally, for the people of the immediate countryside, they hold high repute and only await

* "Mineral Springs of Japan," edited by Dr. R. Ishizu of the Imperial Hygienic Laboratory. The writer wishes to acknowledge his indebtedness to the above for much of the information gathered in this communication.

the construction of electric train lines or good automobile roads and modern hotels to receive the patronage of the world.

As has already been hinted, *the hot springs* possess a popularity far in excess of the others, because of a tradition that the terrestrial heat which this bears to the surface imparts subtle healing and renewing properties not dwelling in spring waters which have been artificially heated. This probably has some foundation in the fact which recent radium studies have divulged regarding the evanescent character of radium emanations.

A tradition has long existed that the efficiency of a spring water as a healing agent is appreciably greater immediately at the source of emergence from the earth than at a point far away to which the water might be transported by a pipe or viaduct. Therefore at all the native hot spring resorts the bathing pools are so arranged that the waters flow directly into the baths by gravity and the volume, as a rule, is so great that a constant current of fresh output from the spring is flowing. It is intensely interesting to observe how these traditions are corroborated by modern findings in radio-therapy.

A favorite method of taking baths is by gravity douche where there is sufficient down grade in the land surface close to the spring to divide the outflow into the multiple deliveries through bamboo pipes from which the hot water drops several feet upon the person of the bather.

Slow sipping of the water at the time of bathing or just after, is much practiced, particularly of those spring waters having repute for gastric and intestinal disorders and also those carrying an appreciable content of radium emanations.

The practice at some of the springs is of taking many baths a day or long immersion, sometimes for hours at a time. Such prolonged immersion in hot waters has much traditional repute in nervous disorders. It is thus seen that long ere the adoption of prolonged bath-tub immersion was thought of as practical in our psychopathic sanitariums, it was an established method of hydropathic treatment in Japan.

Bathing at some of the more popular springs at time of greatest rush of guests is governed by almost military precision. At a given signal from the bath master the foremost line in the serried ranks of would-be bathers rush into the pool and immerse. After the lapse of a stated interval a signal bids them pass on out of the bath pool and the next line follows and takes its turn, and so on until the grist has all been through.

Critical comment has been made on the Japanese habits of bathing, in that many go into the same bath without change of water; but this seems based on inadequate knowledge of actual conditions, *e.g.*, it is the established custom for each bather before entering the pool to take what we call a "sponge bath" from a bucket or tub just at hand, thus cleansing his person before he enters the pool—the real bath being not for cleansing purposes but for the soothing and healing effects of the hot mineral waters.

Congregate bathing by the sexes formerly existed, we are told, but is never seen nowadays except at remote places. However that may have been or is now we are in no position to pass upon it for in all civilized countries at the present time congregate bathing at seashore, clubs and public baths is practised, the sexes associating with very abbreviated costumes and an exhibition of anatomy which leaves little to be imagined.

This paper would seem incomplete without brief mention of some of the most famous hot springs, their location and special features.

Atami, about three hours from Yokohama on Sagami Bay, stands foremost if judgment be based on the annual number of visitors. The last reports available at this writing show a total annual attendance of about 170,000. The special attractions are its accessibility from large centers of population,—Tokyo, Yokohama, Kyoto, and others; its salubrious climate of from a low 35° F. in winter to a high of 85° F. in summer; sheltering mountains on three sides and the fourth open to the sea; a geyser spring called "O-yu," or "Great Hot Water," which sprouts about every four hours. It is a saline radio-active water of about 200° F. The immediate environment is so arranged that nearly all the erupted water is saved in large pools for general bathing and distribution to neighboring hotels. Tradition gives climate and water high value for rheumatic and gouty affections and tuberculosis. It is now rather unpleasantly accessible because of poor and antiquated train-line transportation,

but a new and up-to-date railway is under construction which will bring this part of the coast known as the Japanese Riviera into its own.

Beppu, on the island of Kyushu, is accessible from Kobe by a day and night's sail in a comfortable steamer through the Inland Sea. It is on a fine bay, with a crescentic beach, up through the sands of which percolate great volumes of hot spring water. Here patients are buried in the hot wet sand and great benefit is experienced in muscular rheumatism and neuralgic affections. In close proximity, but a little in shore is a geyser of boiling mud, the virtues of which are being exploited after the idea of some of the European mud baths. The reported number of visitors to Beppu Spa is about 108,000.

Ikao. This is one of the most popular hot-spring resorts, about sixty miles by rail from Tokyo. The waters contain iron and sodium sulphate and bear a temperature of 113° F. Therapeutic tradition gives these waters great repute for anemia accompanying menstrual disorders, therefore patronized largely by women. Annual number of visitors about 33,500. Altitude, 2500 feet.

Senami. This is a very popular hot spring resort near the coast on the Sea of Japan. It has an interesting history detailing its accidental discovery. Some years ago a well was sunk at this point hoping to "strike oil." When at a depth of six hundred feet and no oil was forthcoming, the project was given up. One of the interested parties, however, continued the boring at his personal expense. At eight hundred and thirty-seven feet something happened —not oil came, but a huge volume of boiling hot water shot ninety feet into the air. A flourishing hot spring bathing resort has grown up about this source and the waters have gained high repute for their healing qualities. It is estimated that the daily outflow is more than one million gallons.

Arima is easily reached from Kobe and Osaka and has been famous from time immemorable. The water is alkaline, contains iron, is salty to taste and turbid in color. Tradition gives this spring high repute for dyspepsia tuberculosis, skin affections, and anemia. Temperature of water about 130° F.

Misara. This rather isolated health resort is about 170 miles from Kyoto by train. Thirty separate springs of hot water gush out within a comparatively small area. The total outflow of water is enormous and it is one of the strongest in radioactivity. Its chief chemical ingredients are sulphur and carbon dioxide. It has traditional healing properties for digestive disturbances, hemorrhoids, menstrual disorders, rheumatism and neuralgia, and as a cardiac tonic. Its potentialities are evidently very great and it awaits only greater publicity and modern hotel accommodations to attain world-wide patronage.

No-Bori-Betsu. This is a hot spring of enormous delivery estimated at more than eight million gallons daily. It is situated in the north of Japan about a day's journey from Tokyo. Physical conditions are such that the gravity douche method is employed and is very popular, the patients standing under a stream of hot water coming through bamboo pipes direct from the spring.

Yumoto is one of the most attractive of the high altitude spring resorts over 5,000 feet above sea level on Lake Yumoto with a summer temperature of not over 82° F. It is reached by way of Nikko, known the world over because of its ancestral temples of the Shoguns in their setting of centuries old cryptomeria trees. The output of hot sulphurous waters is very large, coming from many springs and also bubbling up from the bottom of the lake. The waters from the different springs vary in temperature from 105 to 150° F. and are mildly radio-active.

Dogo is a very ancient hot spring resort, its early history merging into mythology. It is on the island of Shikoku near the Inland Sea, thirty feet above sea level. It was the resort of early emperors and ancient relics remain in the way of massive granite bathing pools and old temples. This health resort is visited largely by the inhabitants of southwestern Japan and the attendance averages about 45,000 annually.

Kinossaki, about 100 miles from Kyoto on the Sea of Japan, is also a very ancient hot spring place known since the seventh century. It has a very large outflow of more than 80,000 gallons daily, a temperature of 120° F. Its chief chemical constituents are lime, soda, and chlorine and it is mildly radio-active. Irrespective of the healing qualities of the waters which enjoy high repute, the place is noted for its beautiful scenery and salubrious climate. In the immediate vicinity are famous grottoes rivalling the bosaltic formations at Fringals

Cave off the coast of Scotland. The estimated number of guests annually is about 40,000.

Japan is at the cross roads of world travel. All Pacific steamers from all the North American ports touch at Japan. All the eastern traffic from European Atlantic and Mediterranean ports and all ships from Manilla and the Chinese ports come to Japan. All the travel over the Trans-Siberian Railway is closely in touch with Japan.

The future potentialities of Japan as a world sanitarium are beyond estimate. The five hundred and more known hot springs, many of them located in the midst of most romantic and beautiful surroundings are awaiting only the creation of comfortable transportation facilities and modern hotels of the highest order and adequate medical supervision. When these are forthcoming Japan will reap a richer harvest of summer tourists than Europe ever dreamed.

The only really attractive spring resort for foreigners at the present time is Miyanoshita, about fifty miles from Yokohama. Here is a sumptuous hotel fitted with all modern conveniences and conducted in an irreproachable way. The hundreds of other spring resorts are provided with native hotels, some of very high character and beloved of the Japanese, but very rarely patronized by foreign guests. Some offer "foreign rooms," which the prowling tourist may find comfortable enough for a transitory stay, but do not tempt one to prolong visits.

An estimate has been made of the volume of water delivered by some of the most important springs. It will be borne in mind that all of these are overflow springs, *i.e.*, the delivery does not depend upon raising the water by mechanical means from wells or subterranean pools. The spontaneous irrepressible delivery from some of the springs is unbelievable. Here at Miyanoshita the daily outflow is estimated at about twelve thousand gallons daily. From the total, Hotel Fujiya alone, takes enough to supply unrestricted baths to 120 guests, a pipe to the outdoor swimming pool, all the wants of the Hotel for general washing and cleaning purposes, radiators for heating all the general assembly and principal guest rooms and corridors, and heating coils for a green house. Five other native inns and houses are supplied with all their needs from the same source. The water is at the temperature of about 180° F. at the spring and 140° F. at the delivery faucets in the hotel.

This seemingly abundant supply is, however, but a "drop in the bucket" compared with the output from some of the really good springs. It is related of one hot spring that the outflow is so great and forceful that it is used to turn a mill wheel. The source of such volumes of water is an interesting question. The great number of "simple salt springs" suggests that the waters of the sea may percolate into the seat of the old volcanic fires and then under pressure of steam thereby generated be forced to the surface. It would seem also that there must be great subterranean pools under great pressure of heat or superimposed earth or both, ready to shoot their contents to the surface if but given a vent.

This brief mention of a few representative hot springs of Japan with cursory reference to their chief characteristics and variations in environment must suffice to stimulate the imagination as to the future possibility of this interesting corner of the earth.

Miyanoshita, Japan, August 9, 1920.

REPORT OF A CASE OF CONGENITAL HEART DISEASE WITH COMPLETE AURICULOVENTRICULAR DISSOCIATION PRESENTING UNUSUAL FEATURES.

BY F. A. WILLIUS, M.D., ROCHESTER, MINN.

[From the Section on Medicine, The Mayo Clinic.]

CASE 332892. A young man, twenty years of age, was referred for cardiovascular examination by Dr. R. A. Barlow of the Section on Oto-Laryngology. In 1918, the patient had a mild attack of influenza without complications. Except occasional mild tonsillitis, he had had no previous illnesses.

The patient had been a full-term baby and apparently there had been no obstetric difficulties. He was a "blue baby," and the cyanosis was marked for the first two years. During the first year and a half he was very fretful and coughed a great deal. His development was somewhat retarded and he was considered by his parents to be a delicate child. Owing to shortness of breath he was unable to engage in the usual activities of other children. From early childhood clubbing of his fingers was noticed; this became progressively more evident

until about the age of 12, after which little change was noted.

Examination revealed a slender, underdeveloped extremely cyanotic young man, whose color became almost purple on exertion. Clubbing of the fingers was marked and the toes were slightly clubbed. Cyanosis was most intense peripherally.

Dulness to cardiac percussion extended 3 cm. to the right of the midsternum and 10 cm. to the left. An extrasystolic arrhythmia was present. At the second left intercostal space near the sternum a systolic thrill, augmented by the premature contractions, was palpable. A loud rough, reverberant systolic murmur was best heard at this area; it was audible over the entire precordium, transmitted into the neck, especially into the left side, and toward the left shoulder. The murmur was audible in the brachial and femoral arteries. Jugular pulsations were visible. The liver was not palpable. There was no edema. The systolic blood pressure was 112 mm., the diastolic 82 mm. The blood examination revealed the presence of polycythemia, hemoglobin 95 per cent. (Dare), erythrocytes 7,400,000, and leukocytes 9,200. Differential count of 200 cells showed polymorphonuclear neutrophils 75, small lymphocytes 16, large lymphocytes 8.5, eosinophils 0, basophils 0.5. A roentgenogram of the chest showed the right ventricle to be dilated. Urinalysis was unimportant except for a very faint trace of albumin.

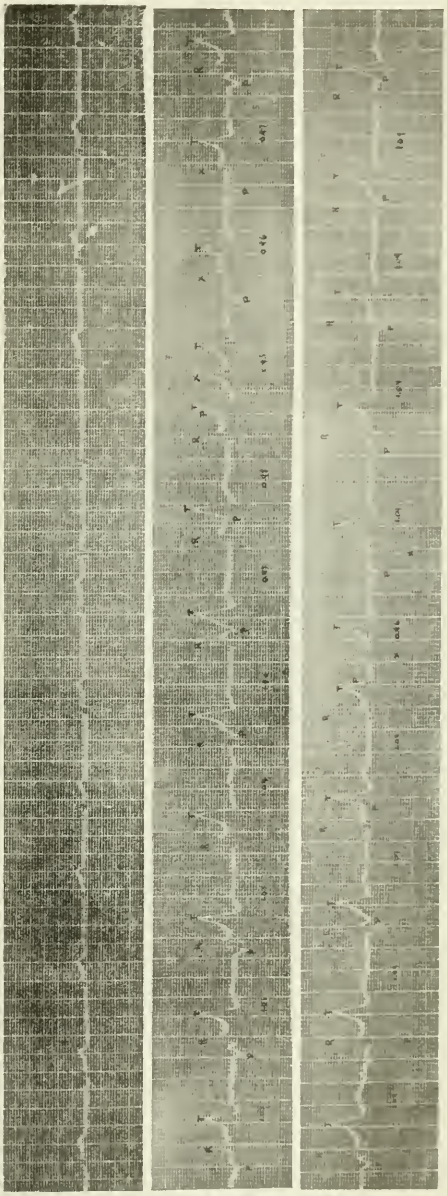
On examination of the nose and throat the tonsils were found to be moderately enlarged and containing plugs.

It is impossible to be dogmatic clinically with regard to the type of lesions in congenital heart disease but the anomalies probably present in this case were pulmonic stenosis associated with patency of the ductus arteriosus (Botalli). The fact that the murmur was transmitted into the peripheral vessels makes the latter anomaly a possibility at least.

DISCUSSION OF ELECTROCARDIOGRAMS.

The record shown in Figure 1 is of Derivation 1. Because of the low amplitude of deflection it is rather difficult to analyze the individual waves. Two consecutive premature contractions of ventricular origin were present. Preponderance of the right ventricle is evident.

In the record of Derivation II (Fig. 2) the P wave is found to be inverted (negative), indicative, according to the consensus of opinion,[1, 2, 3, 4, 5, 6, 7, 8, 11, 13, 14] to a change in the location of the pacemaker. The probable region



DERIVATION I. DERIVATION II. DERIVATION III.

of impulse origin is the lower portion of the auricle. The auriculoventricular dissociation is at once apparent. A slight arrhythmia of the auricular rhythm is present. Throughout the tracings the P wave shows the tendency to occur sooner in each cycle. In the first cycle of Derivation II it occurs 0.19 second before the beginning of the R wave, in the second cycle 0.16 second, and in the third cycle almost coincident with the R wave. In the fourth cycle the P wave is absent but the S wave has an amplitude which is 3 mm. greater than that of the other complexes, indicating a superimposition. The fifth cycle reveals that the P wave occurs between R and T, slightly deforming the contour of the latter wave. The shifting relationship of the P wave to the other complexes is noted by following the tracing to its completion. Two consecutive premature contractions apparently of ventricular origin interrupt the ventricular rhythm. The interauricular cycles are somewhat diminished during this period although they remain so during the remainder of the tracing, indicating, I believe, no effect of the premature contractions on the auricular rhythm.

Owing to this progression of P wave occurrence the ventricular rate exceeds the rate of the auricles. In Derivation II the auricular rate is 61 and the ventricular rate 69. This is unusual in complete auriculoventricular dissociation.

Another striking feature of this derivation is the character of the T wave. It is markedly exaggerated and very peaked and not unlike the T wave in some of Smith's published electrocardiograms made following ligation of the coronary arteries. A T wave having such characteristics indicates, I believe, preponderance of contraction in certain areas of the ventricular musculature.[12]

Derivation III (Fig. 3) is not unlike Derivation II and may be analyzed similarly. The auricular rate is 57 and the ventricular rate, 63.

The occurrence of this unusual type of complete auriculoventricular dissociation with congenital heart disease presents the possibility that the disordered mechanism is also congenital. This question cannot be settled.

We were not afforded the opportunity of further electrocardiographic study of this case and regret greatly our inability to determine the effect of the vagus stimulation and atropin.

SUMMARY.

1. A patient with congenital heart disease presented a very remarkable type of complete auriculoventricular dissociation.

2. The P wave was inverted (negative), indicating an ectopic focus of stimulus production.

3. An auricular arrhythmia was present, apparently not influenced by ventricular activity.

4. The P wave shows the tendency to occur sooner in each succeeding cycle.

5. An abnormal T wave was present in Derivation II and in Derivation III.

6. The rate of the ventricles was greater than that of the auricles.

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OSLER SOCIETY FOR THE STUDY OF MEDICAL HISTORY.—The Osler Society for the Study of Medical History has been organized by a group of twelve physicians of the Mayo Foundation. Dr. William C. MacCarty, associate professor of pathology, has been elected president of the society.

THE NEW YORK ACADEMY OF MEDICINE.—In accordance with the conditions of the will of the late Dr. Abraham Jacobi, the New York Academy of Medicine has received a bequest of five thousand dollars and a library valued at $4,567.

REPORT ON 64 CONSECUTIVE EXAMINATIONS OF THE DUODENUM ON THE CADAVER.

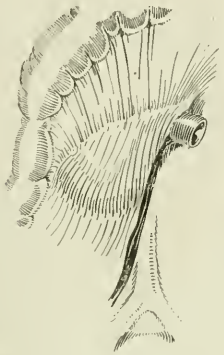

Fig. 1. 28.0%, 18 cases. This position corresponds with the descriptive text of the standard anatomies.

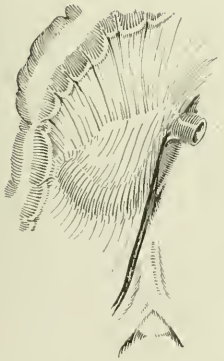

Fig. 2. 22.0%, 14 cases. The illustrations in the anatomical text-books frequently show a similar amount of ascending duodenum on the left-side of the root of the mesentery. Fig. 1 and Fig. 2 may be considered as "Text-book normal."

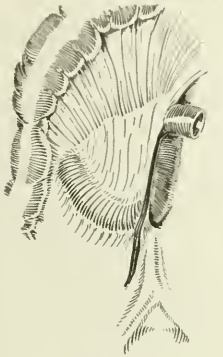

Fig. 3. 26.6%, 17 cases.

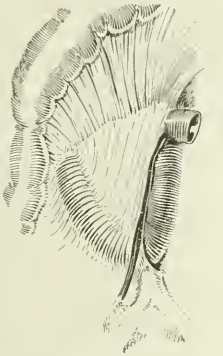

Fig. 4. 15.6%, 10 cases.

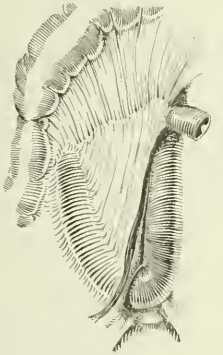

Fig. 5. 7.8%, 5 cases.

Fig. 5 shows the extreme position. The other four cases of this group were in intermediate positions between Fig. 5 and Fig. 4. In all cases the duodeno-jejunal flexure was in its reputed position.

H. F. Aitken.

CONDITIONS IN PALESTINE DURING THE WAR AND MEDICAL RELIEF AMONG THE CIVIL POPULATION AND THE REFUGEES.*

BY IZAK ALCAZÁR, M.D., BOSTON.

(Continued from page 45.)

THE FINAL BLOW IN PALESTINE.

The fall of Jerusalem completed the deliverance of the Southern Palestine. The principal cities in this area were: El-Arish, Gaza, Hebron, Bethlehem, Ramlah, and Jaffa. The remainder of Palestine comprise the Jordan Valley, with the cities of Jerico and El-Salt; Galilee in the north, with the cities of Jenin, Nazareth, Tiberias, and Saffed; along the coastal plain, Haifa, Tyre, and Acka; farther north, Beyrut, the whole of the Lebanon region, with Damascus and Aleppo—all this territory was still in the hands of the Turk. Hardly any fighting was done after the conquest of Jerusalem in December, 1917, until the beginning of this drive.

The autumn of 1917 and the early winter of 1918 went hard with the allied forces in France, and the British were compelled to withdraw the major portion of their forces in Palestine and send them to the Western Front. During the early part of 1918 Palestine was inadequately protected. Had this fact been known the Turks could have recaptured Jerusalem and other cities without much difficulty. Furthermore, the British in the Jordan Valley were sustaining many losses from malignant malaria. But as soon as the tide in Europe commenced to turn in our favor, British, Hindu, Australian, and Italian troops were sent to reënforce the Palestinian armies. During this lull of apparent hostilities a great deal of elaborate preparation was secretly and steadily progressing for the complete extermination of the Turk and the German out of the Holy Land.

The preparation for this drive entailed a great deal of marching, and the troops, always moving by night, remained hidden in orange groves by day. Our air squadrons prevented the enemy observers from discovering any change behind our entrenchments. That the enemy remained mystified to the end is the finest tribute to the strategy of General Allenby and his Staff. Many of us who were in close touch with the British officials knew that the drive was about to be precipitated, and were expecting it every moment. The day of salvation finally arrived after many months of suspense.

It was on the 18th day of September, 1918, at 4.30 in the morning. The enemy was suddenly stunned by the violence of the uproar which announced the beginning of the battle of Sharon on the West, where I was stationed for duty, and by another blow that was struck simultaneously in the Jordan Valley, and by the third attack launched at Samaria in Central Palestine. Every gun in each of these sections was fired off punctually as if by the pressure of an electric button. The roar of the artillery and infantry sounded and felt like a succession of thunder bolts and earthquakes combined. It was pandemonium let loose. The Western section met with so little resistance in most places that our men were overtaken by the fire of their comrades in the rear. The cavalry went dashing ahead upon the rear flanks of the enemy and scattering them in disorder. The infantry went over the top ahead of time and made its way towards the enemy entrenchments before the Turks and the Germans could put down a barrage, and in almost every case the shells of the enemy burst a long way in the rear of our army. The sight of the Hindu soldiers in this battle, with their dishevelled black shining hair, with fixed bayonets or with a knife between their ivory teeth, demanding, with blood in their eyes, a Turk or a German to murder,—was to me more terrifying than the blast of the cannon. The fleeing Turks found no mercy from the machine guns or bombs of the air raiders. This aerial combat will remain with me as one of the most wonderful of all spectacles I beheld during the war. It was done at such low altitudes that their maneuvers could be discerned very distinctly. I saw the pilots shoot forth their yellow darts, performing meanwhile their feats of zigzagging, looping the loop, and other stunts to outwit and dodge the enemy's fire, at the same time inflicting their fatal blows. Our flyers dropped in one day eleven tons of bombs and fired thirty-six thousand rounds of bullets. The air was quickly freed from German and Austrian

* On the 25th of May, Dr. Alcazár sailed for Palestine the second time to open an eye, ear, nose, and throat hospital for the needs of the civil population. The plan is to establish the hospital in Haifa and hold clinics in the surrounding villages, one in Nazareth and one in Acca. The chief feature of the work will be to educate the natives as to the contagious nature of trachoma and in prophylactics.—*Editor.*

flyers. In this section the enemy found its Armageddon.

At the close of the first day there were captured 230 guns, 25,000 prisoners and three hundred transport vehicles.

The Germans and the Austrians tried to forsake the Turks and escape; they ran like wild rats that were set on fire, but the advancing British Army pursued them furiously and hemmed them in on all sides. Thousands of prisoners passed through the cages at night, and with few exceptions, they were very thankful that their misery was over.

This is but a brief description of a part of this remarkable drive which passed under my observation up to noon of the first day. The battle continued eighteen days until the British reached Aleppo.

When my own work began, I saw nothing but the wounded, dead and dying on every side. The field ambulances were running to and fro over the battlefield, bringing in the wounded faster than they could be cared for. During this time bullets and shrapnel went whizzing by my tent. Strange how one gets accustomed to dodging missiles of death on the battlefield! I felt little or no fear. My only thought was how quickly I could help the poor fellow before me and make room for the row of stretchers that was waiting without my tent —a row that never grew shorter but was continually extended.

I followed the Army to Haifa, a distance of about forty miles. Upon arriving there I was ordered to return to the main hospital, for the number of head and brain injuries was increasing rapidly. When I arrived there I found work for at least one month. I was in the hospital every morning from eight to twelve, and in the afternoon from four to six, constantly operating. At the end of the third week I succumbed to sand-fly fever and took to my bed.

Upon recovery, I resumed my clinic and hospital work for the civil population and the refugees at Jaffa.

CONDITIONS OF THE REPATRIATED REFUGEES AND THE RELIEF WORK DONE AMONG THEM.

After the Final Drive the refugees left the towns and villages to which they had been driven by the Turks and returned to their former homes.

These exiled people presented a serious problem. They were penniless. Many of them found their homes wrecked, the majority were suffering with either malaria, pneumonia, influenza, tuberculosis, or typhoid, and most of them with trachoma. Homes and food had to be provided for them, medical aid had to be administered; for these people suffered long and had been shamefully neglected.

Turkey had declared war against the Allies, but in reality she was waging war against her subjects. Exposure, poverty and destitution produced a peculiar illness known as "Starvation Disease," which was particularly manifested in children. I saw them by the hundreds daily wandering about in the streets and in my clinic, emaciated, anemic skin, sunken cheeks, contracted chests, distended abdomen and bow legged, and their bodies covered with sores, thus presenting a ghastly picture which will haunt me for the remainder of my life.

Wherever the Turks went they succeeded in draining not only the blood of the inhabitants, but also the vitality of the soil, and when they were forced to abandon a place and flee to a more secure shelter they left their last abode a veritable scene of desolation, so that when the British captured it they found it morally and economically in ruins,—cattle, crops, and even the seeds had been consumed. There was no ambition left for the peasant to plough his field or to prune his vineyard. The shepherd remained in his hut rather than take his flock to graze on the hills or in the valleys. Fields were therefore left uncultivated, cattle or sheep were scarcely seen in any of the conquered territory, and even the few forests and the sparsely planted gardens were stripped of every tree to furnish fuel for the military locomotives and for the kitchens of the Army. Palestine depends on the outside world for nearly 70% of its needs. The land produces no coal, oil, cotton, and very little wool. There is no lumber of any kind. Potatoes, rice, peas, beans, sugar, coffee, tea, every article of clothing, household utensils, and countless other commodities must be imported. For the need of its six hundred thousand inhabitants, Palestine can produce only wheat, barley, fruits, vegetables, poultry and cattle. Isolate such a land from the outside world and it can be imagined what dire distress there is created in one year even in normal times. How much more distressing the situation becomes when the devastating hand of war is laid upon it and

with a Turkish rule that sought to destroy its own people.

It devolved upon the British Government to import seeds, cattle and merchandise from Egypt, to sell, loan, and to distribute to the peasants as the case justified itself, assuring them that the government would buy all the crops and cattle that they could afford for sale and at a good price. Forthwith the Arabs came out with their old-fashioned ploughs of Bible times, the shepherd was heard piping his flute to his flock on the hills of Judea and Galilee, and by the brooks in the valleys, and signs of life were thus seen everywhere. Until the people could earn enough to maintain themselves, relief camps were established in many centers. Suitable work was provided for thousands of refugees, thus enabling them to earn a living instead of being dependant upon charity. Road mending, interpreters for the business of the government, clerks, policing and burden carriers, the manufacture of souvenirs and fine embroidery furnished to many a means of livelihood. These articles found a ready market among the officers and soldiers. Despite all these efforts on the part of the government and philanthropic contributions from America there is still in Palestine great poverty and misery.

The eye condition of the refugees was exceedingly grave. Ninety per cent. of them had trachoma; 50% were acute cases, and 20% showed injury to vision, requiring some sort of an operation for the amelioration of their condition. Of the adults 7% were hopelessly blind. Fifteen per cent. of the children had permanent injury to their vision. I saw trachoma in infants two weeks old. Some of these little tots had such severe infection with ulceration of one or both eyes causing a perforation of the eye ball with complete evacuation of its contents, the result of which is absolute blindness. It was heart-rending to be forced to tell the parents that the case before me was helpless. Many of these refugee children had been bereft of both parents during the war; others have been left without a single relative—death had wiped away whole families. Many an orphan had been picked up by some kind woman whom the child had learned to call mother or grandmother. It was a terrible sight to note the sad expression on the faces of such kind-hearted women when they would hear from my lips that no medical assistance could be rendered to their protegés. Among these refugees there were hundreds of children without a home. I saw them seek shelter at night under naked—nothing more upon their bodies than a be expected, they were dirty and practically naked—nothing more upon their bodies than a little garment made of sackcloth which was the worse for wear and still the worse for filth.

I did not dare to ask these little children to return the following morning with their parents to receive instructions for the care of their eyes or ears. The answer would invariably be: "Father went to war two, three or four years ago and we have not heard from him, and mother is sick in bed." I once asked a child to bring his aunt with him. The little fellow did not know what I meant. He was one of the many unfortunates who had lost every relative during the war. The number of orphans among the Mohammedans and Christians was appalling. The Jews suffered no less, but they founded several orphanges which cared for their own in a most commendable manner. But the orphans of other nationalities are still homeless and are suffering many privations. My heart goes out to them in pity and sympathy.

It was impossible to harden one's feeling against the little sufferers. I realized that they required immediate relief of food, clothing, shelter and a mother—or some woman with maternal instincts—to care for them just as much as they needed urgent medical treatment.

Among the repatriated refugees there were hundreds of women who had been made widows by the war. Their husbands, brothers or sons who had maintained them were either dead or far away, engaged in the bloody business of war. I conceived a plan to assist a few of these destitute women and at the same time rescue some of the orphans wandering about the streets. Many kindly women were found who were willing to board and care for these little ones, and with the assistance of kind patients and friends in America I was enabled to secure homes for a few orphans until some one was found to care for them more permanently. The satisfaction of being the means of saving the lives of many of these poor children will remain with me as the greatest joy of my work in Palestine. To most of these women it was a God-send. They took the little ones into their

homes as well as into their hearts, veritably replacing their own children whom they had lost during their wanderings. A woman once said to me, placing her hand upon the head of her adopted child, "But for this comfort my life would have been lonely and unbearable."

It is sad enough to see children dying of starvation; that in itself is sufficient cause to rob one of sleep and selfish happiness, but more pitiable is it to see them go blind for life for lack of efficient, persistent and vigorous treatment against the common enemy of Egypt and Palestine, *viz.*, trachoma; that grips the heart as in a vise and will not let it go.

(To be continued.)

THE DUTY OF STATE MEDICAL SOCIETIES.

By R. C. Fish, M.D., Worcester, Mass.

Like all great questions that the public and governments have to meet, oftentimes questions of exceedingly momentous importance, often necessitating the most exquisite sense of discretion by legislators and statesmen, the medical profession is rapidly approaching a crisis in its affairs.

The status and position of the State Medical Society is somewhat in jeopardy. Its function of being purely an organization where men meet both surgeons and physicians, to discuss and exchange ideas and opinions on all subjects associated with the medical profession has been compelled to submit to an exploratory incision and examination.

It has often been a question, in my way of seeing things whether the Massachusetts Medical Society has ever really seen its duty toward the profession, other than the fellowship and association purposely to exchange opinions on medical and surgical matters. That is — the duty the Massachusetts Medical Society owes to the profession of the State of Massachusetts, relative to the legislation that should be enacted by the State of Massachusetts in the interest of the profession.

It has also a duty of having sufficient interterest through its district societies in the appointment or selection of trustees of all public hospitals. Business men may be business like and administrate according to their business ideas, but when the fairness and the interests of all men in the profession are to be considered, they are exceedingly flimsy props and weak minded administrators to lean upon.

Trustees of corporate hospitals are not any better administrators nor any more fair in the rightful distribution of things than those at the head of public hospitals. All of them seem to have an obscure vision of things when the minority of the profession who have not been favored with any sort of appointment, should be taken into account in regard to their chances of having an opportunity to enjoy at least some share in the different stages of digestion.

May I ask those who read this article to follow me, and I will endeavor to point out —that is to say, as I think it should be—"The Duty of a State Medical Society"?

The moment any society accepts dues or fees from any individual or individuals, that society assumes an obligation. The obligations are those of consideration relative to their interests. You will notice that I say "their interests"; *their* does not mean those having staff surgical appointments and staff medical appointments, or those having out-patient appointments, nor those having school, factory, city and state appointments—these men have been taken care of in a way, that is, they are in line for something to be thought of as better, whatever it may be.

Then there is the lodge doctor with his many calls and a great many, no doubt, for nothing, because he has sold himself into that sort of bondage for a per capita head fee. As you will see, *their* means not only the above-mentioned surgeons as well as all other doctors, but also that minority of men in the profession, especially in cities where the cost of living is high, who have nothing but their diplomas and wits with which to *get by*. The sparing distribution of what remains is exceedingly meagre.

Would it not be a happy suggestion for the Massachusetts Medical Society to select a committee to call upon the lodge doctor regarding the abuse of his license? The societies that employ the lodge doctor are composed to a certain extent of the public. The public that we hear so much about, wishes and desires and has a right to expect a square deal, yet that same public should and must be brought to realize that by employing lodge doctors it is not extending that same square deal to a portion of the medical profession, but is

contributing largely to their pecuniary distress.

Hospitals, in open competition with the general practitioner, are also accomplishing, with the aid of their well meaning, although not far-seeing trustees, the very same circumstances. Whose duty is it, if it is not the duty of the State Medical Society, to assume the responsibility of equalizing the professional opportunities? Not as a charity; no one accuses the State Medical Society of charity. But is it not rather the seeking of a square deal for the minority, than a mere form of charity as seen through the eyes of those who have lived their professional careers amid the glory of affluence? The maternity wards and private rooms of the hospitals of the city of Worcester render service to about two thousand cases yearly, then there are several men in the profession who gather in two or three hundred a year.

Had we medical men instead of business men as trustees of our public hospitals, as well as corporate hospitals, there would be a possibility of a more and general consideration of the profession in general. As it is, things seem to be for those who are favored, or unfortunately imposed upon. The medical fraternity may understand things better than the business men, therefore let us have a change; we may breathe more freely.

The Massachusetts Medical Society has indeed a magnanimous duty toward the betterment of the non-appointed portion of the medical profession or what may be termed the minority. I mean by non-appointed, that part of the members of the medical fraternity who have no assistance from any source whatever:

1. Its duty to suggest the better regulation of the profession by sincere and effective legislation.

2. Every legislative act pertaining to the profession should be considered pro and con, the extent that it may affect the incomes of those whom legislation for the public good may be likely to affect most. It would be the non-appointive portion of the profession.

3. In cities with adequate hospital protection, etc., one physician to ten or fifteen hundred people can readily do all the work that he may be called upon to do.

Let us realize for an instant that there are lodge physicians who have two, three and four lodges and their families to care for, that is, twenty-five hundred to three thousand people. The estimate of one to ten or fifteen hundred is reasonable.

LEGISLATION PERTAINING TO BOARD OF REGISTRATION.

Dr. Frothingham of Boston suggested before the Worcester District Medical Society the idea of annual re-registration. It is an excellent idea. Excellent in the fact that it would arouse from their lethargy a great many men of the non-appointed portion of the profession to the realization that they are still members of the medical fraternity.

"The combing out process of the poor doctors." Another suggestion of Dr. Frothingham, one that we need a bonndless amount of light upon. It may be well for one and all to bear in mind the many intricacies of legislation, that is, whether it is to be a process of elimination or license discontinuation of those long in the service of the profession. Let the profession safeguard itself by at least believing that "Government is obedience to that form of law enacted only by legislatures, senates, assemblies and parliaments." Boards and committees are appointive or selective and not elective bodies, therefore their work is along the path of suggestive legislation and of performing their duties relative to legislation already enacted.

There should be an act of legislation giving the Board of Registrars the power to compel all men who are licensed, that all unfair lodge practice must cease, and that doctors establish themselves on the same equal opportunity. Manufacturers also ought to be brought to realize that there are others dependent upon public patronage. It is as well that men employed by the many industrial organizations, as doctors and surgeons, cease their work with the day's work and that the injured individual should be given the right to select whomever he may choose thereafter to care for him. The manufacturer ought also to realize that there are those in the profession for other purposes than wasting time.

Legislation relative to a better and more complete medical education, thereby increasing the term from four years to a five years' course, and the sixth year for practical interne work. I would suggest preliminary requirements—those of a high school certificate and the full university or collegiate course. An act of legislation for the above would benefit everyone. Those who enter the profession after us would

easily be the ones to profit infinitely by it. Such an act would improve the standing of the profession, help everyone now in the service of professional work for the good of the public. It would also be the means of many men entering more useful vocations than by selecting an incomplete medical training, hurrying through it, etc. The one so doing starts immeasurably below men of more complete and longer training The advantages would be many:

1. Men would start on the same level.
2. Proper regulation of doctors in proportion to population.
3. The avoidance of wasted or useless lives and the unhappiness brought about by meagre living.

It is up to the Massachusetts Medical Society and the American Medical Association to get in touch with the American Association of Medical Colleges. By so doing a more complete understanding may be accomplished.

Book Reviews.

A Study of the Epidemiology of Tuberculosis, with Especial Reference to Tuberculosis of the Tropics and of the Negro Race. By George E. Bushnell, Ph.D., M.D., Colonel United States Army (Medical Corps), retired; Honorary Vice-President and Director National Tuberculosis Association; Member American Climatological and Clinical Association. New York: William Wood & Co. 1920.

The name of Colonel Bushnell, the author of this book, will be familiar to all medical men who served in the tuberculosis department of the Army in the late war. Under his guidance the almost incredible task of examining every recruit for tuberculosis before going overseas was accomplished and, as a result, of all the deaths in the expeditionary forces only 2.3% were from tuberculosis. To designate tuberculosis as an epidemic disease may seem strange to one who knows it in this part of the world as a chronic endemic one, but Colonel Bushnell shows in this volume by an analysis of a large mass of epidemiological data, collected from tropical countries and elsewhere, that tuberculosis, when it occurs among people who have never been exposed to the tubercle bacillus before, acts like an epidemic disease both in its rapid spread and in its acuteness. From a consideration of the facts collected from widely scattered sources the author concludes that there are two different manifestations of tuberculosis —one, the primary form—occurring in persons who have had no previous immunizing infection—a form not only different in its progress but in its pathology; and the other—the fibrocaseous form—as observed in civilized countries, which is, as the author believes, not caused by a new or recent infection but rather the recrudescence of a previous infection acquired in childhood, hence its generally slow progress and tendency to heal. In remote regions, such as the interior of Africa or the Islands of the Pacific, untouched by civilization, tuberculosis is comparatively rare, but when it does occur, through the coming of some bacillus carrier, it may spread like any other epidemic and becomes an acute and rapidly fatal general infectious disease. The chronic form in these regions is rare or unknown. It is an infection upon a "virgin soil" as with the infant with us. The history of tuberculosis among the North American Indians, as the author shows, is very similar to that among the non-tuberculized tropical natives. With the negroes, however, Colonel Bushnell believes that they were largely tuberculized while in slavery and that their greater mortality over the white race, after they obtained their freedom, was due to their unhygienic mode of life and excesses, rather than to a new or primary infection. Neither geographical position, race, climate or sanitation influences, the author believes, to any great extent, the difference in the incidence and clinical course of tuberculosis in the tropics but rather the fact that the native inhabitants of these regions were not protected by a previous benign infection. We have, then, according to Colonel Bushnell, the two great classes, the immunized, who have received a protective infection, consisting of all civilized peoples; and the non-immunized, the unprotected native peoples, and infants and very young children in the civilized nations. That "practically all civilized adults, even the most healthy, have undergone a tuberculous infection," Colonel Bushnell believes to be a fact, proved by observation at autopsy, by the Von Pirquet test and by radiography on the healthy subject. This fact, he declares, is of hardly less importance in phthisiology than the discovery of the tubercle bacillus. The belief formerly held before the discovery of the tubercle bacillus, that consumption was not infectious, contains an element of truth, the author says, in that it is not infectious for those who have already a tuberculous infection, even though it be occult.

"Optimal immunization until 100 per cent. become immune is the wished-for goal." in our present state of civilization, the author declares. As a result of these studies in the epidemiology of tuberculosis, Colonel Bushnell makes several practical suggestions: first, that we should lay less stress upon the danger of adult infection and more upon that of the non-immunized young child; second, that we should improve in every possible way the health of the community

so that a fortunate initial infection shall not be impaired and converted into manifest and dangerous disease; third, that tuberculosis workers and associations might well undertake the task in their various communities of testing the children by the cutaneous tuberculin test, as has recently been done with a limited number of children in the Framingham Demonstration, such tests to be continued for a series of years. The procedure is simple and with a little instruction any intelligent layman could do it. The collection of such a series of facts would be of extreme value, Colonel Bushnell believes, both for guidance in prophylaxis and treatment, and for statistical information. This would seem to be a feasible new piece of work for local tuberculosis associations to undertake. Colonel Bushnell writes from great personal experience in dealing with tuberculosis and a deep study of its problems, and coming from such a source, this book is a very valuable and unusual contribution upon a subject which is receiving so much attention by investigators the world over. Although one may not accept the conclusions arrived at by the author as definitely proved, yet it must be confessed that, in the present state of our knowledge, they best explain the facts, gathered from all parts of the world, relating to the various forms and manifestations of tuberculosis.

Diseases of Children. By JOHN LOVETT MORSE, A.M., M.D. Third Edition. Boston: W. M. Leonard. 1920.

The third edition of "Diseases of Children," of the Case History Series, has been issued. The first edition, published in 1911, was printed three times; the second, revised and enlarged, was twice printed; the present edition follows the general plan of the first two, but has been revised to contain the methods of diagnosis and treatment which have proved to be most successful since the publication of the previous edition. There are presented two hundred case histories selected to illustrate the diagnosis, prognosis, and treatment of the diseases of childhood, with an introductory section dealing with the normal development and physical examination of infants and children. In this third edition the author has amplified the Table of Growth during the first four years, inserted a Blood Pressure Table, and added comments on congenital obliteration of the bile ducts, cephalhematoma, and obstetric paralysis, with directions for serum treatment. The section on the gastroenteric tract has been rewritten; cases have been presented to illustrate indigestion from excess of breast milk, artificial food, fat in breast milk and in artificial food, sugar, maltose, and starch, and to illustrate infections caused by dysentery bacillus. A chapter has been added to explain home modification of infant foods and the determination of their composition and value; directions have been given for the use of neosalvarsan and mercurial treatment; new material on whooping cough and the value of vaccine treatment has been added. There is presented also in this edition discussion of acute nephritis, with improved tables of food values, Edebohl's operation for nephritis, methods of treatment of emphysema of the lungs, of enuresis, and of tetany. The author has given his experience in the treatment of infectious meningitis due to pneumococcus, of infantile paralysis, diabetes mellitus, and diabetes insipidus. In addition to these main subjects of revision, the third edition shows careful study and editing to make the book a complete and up-to-date text-book on pediatrics.

Diseases of the Nose, Throat, and Ear. By W. S. SYME, M.D., F.R.F.P. and S.G., F.R.S.E. Edinburgh: E. and S. Livingstone. New York: William Wood and Company. 1920.

An excellent handbook on the diseases of the nose, throat and ear has been written by Dr. Syme for the benefit of students and practitioners. The work is based on the author's own experience and observation, recorded in a concise and practical manner for the purpose primarily of stimulating interest in this special field, the importance of which is often inadequately emphasized in training courses. Methods of examining the nose, the pharynx, and the larynx are described in detail, with excellent plates to illustrate the text. In the section dealing with the nose are considered affections of the external nose and of the vestibule, rhinitis, the nasal septum, nasal growths, epistaxis, and nasal neuroses. Methods of treating diseases of the nasal accessory sinuses are considered, and instructions are given for performing the intra-nasal antral operation and the radical antral, or the Caldwell-Luc, operation. The author has outlined operative procedures for dealing with diseases and tumors of the pharynx and the larynx. One section of special interest deals with syphilis, tuberculosis, and lupus of the nose, pharynx, and larynx. The two methods of direct examination of the upper air and food passages,—one by suspension pharyngoscopy and laryngoscopy, the other by direct laryngoscopy, bronchoscopy and oesophagoscopy, are clearly described and will be of value to practitioners. Careful consideration is given to the affections of the ear and their treatment; the importance and usefulness of x-ray examination in connection with suppurative conditions in the nasal accessory sinuses is explained. In an appendix are given formulae for local anaesthetics, lotions, caustics, mouth and nasal washes, pigments, sprays, drops for the ear, inhalations, insufflations, and ointments. The book gives an unusually clear and practical presentation of an important subject.

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ALL AMERICA CONFERENCE ON VENEREAL DISEASES.

THE All America Conference on Venereal Diseases and social hygiene was held in Washington last month, the call to it having been sounded by women before the International Health Conference at Cannes, France, in April, 1919. The delegates there, who represented the five allies who fought in the great war, called for regional conferences to take up the work; and of these the meeting in Washington was the first.

The second will be held next May at Copenhagen, Denmark, and will be attended by representatives of all the Scandinavian nations and by Holland and Great Britain. Later conferences will probably be held in 1921 at Paris and at London, and one or both of these will be attended by delegates from Germany, which before the war did much against the twin diseases.

The meeting in Washington was generally agreed by all who attended its sessions to be one of the most remarkable medico-sociological gatherings ever held in the United States. This was probably a result of the plan on which the conference was organized and carried on; for this differed markedly from that of the usual medical convention. No set papers, such as commonly occupy most of the time, were read; and the few set speeches that were prepared were almost completely done away with by unanimous consent.

The work was directed by the General Conference Committee, originally planned to number fifty, but later expanded to more than one hundred, selected from the four hundred and odd delegates by Dr. William H. Welch, president of the conference. The effort, largely realized, was to gather in this committee those who, by their studies, experience, and other attainments and by their relations to other official and non-official bodies, could speak with authority on the many phases of the work. Its membership included clinicians, pathologists, sociologists, syphilographers, gynecologists, social workers, psychiatrists, and others.

Split into twelve sub-committees, each of which had a special group of problems to consider, the committee worked long and hard. The problems were presented to them in the form of questions which had previously been prepared by the administrative committee. One by one the answers were worked out, often after long effort which harmonized views that at first appeared to be divergent.

Lunch time brought rest but no escape for the members of the conference committee. The organization did not permit them to scatter, but took them for automobile rides to points of interest and then brought them back to the hotel in time for lunch, immediately after which came the hour for reassembling. The result was that the afternoon sessions began promptly with a full attendance. Some delegates remarked plaintively that they had never worked so hard in all their lives before, "but," they added, "your methods of organization most assuredly do get fine results."

The committee resolved itself into a committee of the whole for the afternoon sessions and discussed *seriatim* the reports that had been reached by the twelve small groups in the morning. Naturally, many of these reports were warmly debated, for the viewpoints of the different classes

of the membership were very different. The medical and the psychological men, for instance, often disagreed at first, only to find cause later to modify their *ex parte* ideas considerably in the light of those advanced by the others. And so, also, of other groups and members. The results of such debates often proved to be invaluable.

While the morning and afternoon committee meetings were going on, the remaining delegates, some 300 in number, assembled in the auditorium of the United States National Museum to listen to set papers; but, after the second day, these were reduced by common consent to a minimum and, in their place, were taken up matters raised by the delegates themselves. Many such debates resulted in the formulation of new questions for submission to the general conference committee.

In the evening the delegates met again and received the findings of the general conference committee, many of which were warmly debated. Members of the committee were on hand to defend their action; but not a few resolutions were referred back to them for further consideration, which ultimately resulted in harmonious agreement and invariably in considerable improvement.

The resolutions reached by the conference are not yet available. They were submitted to the delegates and passed upon as they were reached by the conference committee and not in the order propounded; and they can be presented to the profession only after considerable editorial labor. The work has already been begun and will be pushed to early completion.

The general form of the manner in which some of the questions have been answered is shown by the following resolutions adopted by the conference:

In reply to a question as to the establishment of immunity to gonorrhea and syphilis, the Committee presented the following resolution: "With reference to gonorrhea, there is no evidence of the establishment of any immunity to disease beyond that of the more or less temporary immunity in the case of existing individual infections. Such a temporary relative immunity may be lost either as a result of disturbed relations between the infecting organism and the host or through the introduction of a new gonorrheal infection.

"With reference to syphilis, there is no evidence of an absolute and permanent immunity to syphilis unless it be that due to an existent infection. There is evidence to show that infection may exist without obvious manifestations of the disease. The immunity ensuing in such an infection may extend even to the degree of a commensal or symbiotic adaptation."

With respect the the use of the Wassermann reaction, among other things, it was resolved that: "The blood Wassermann reaction should not be used as a sole guide to the duration of a syphilitic infection. The blood Wassermann reaction should not be used as the sole evidence of the effectiveness of a particular drug or method of treatment. The blood Wassermann reaction should not be used as the sole evidence of 'cure,' no matter how many times repeated."

Of interest to laboratory workers and clinicians is the resolution that: "The complement fixation test has not yet been shown to be of value in the diagnosis of doubtful cases of gonorrhea. It is possible, however, that the precipitin test recently reported by Meader and Robinson may be of great value."

The committee enumerated some of the advantages of having venereal disease clinics operated in conjunction with other clinics, and pointed out that such a plan promotes recognition by the public that venereal diseases are being dealt with exactly like other diseases. It also pointed out that under this plan the treatment of venereal diseases in the same institution with other diseases promises a better understanding on the part of young physicians, especially among interns and medical students, regarding the importance of these diseases and of the true relation established between them and other pathological conditions.

In promoting education with respect to the venereal diseases, it was resolved that: "Fear should not be deliberately stressed as a deterrent. The element of fear should appear only to the extent that it is inherent in the presentation of the facts themselves. Any morbid tendencies resulting from such unavoidable fear should be corrected by positive and constructive teaching as to the prevention and cure of the disease."

In dealing with Law Enforcement it was resolved that: "The establishment and maintenance of high standards of sex conduct is the best protection of public health from venereal diseases . . . That up to the level of the highest standards which can be sustained by public opinion, laws penalizing the promotion

of and the indulgence in illicit sex relations constitute sound and practicable public health measures."

In dealing with sex offenders it was resolved that: "The establishment of reformatories with standard equipment for examination, classification, training, recreation and parole is the most hopeful method of rehabilitating the old offender."

The psychological aspect of the venereal disease problem, at least in one of its phases, was touched upon in the following resolution: "Although there is danger that a superficial and erroneous interpretation of the Freudian psychology in regard to the repression of the sex instinct may be detrimental to the successful development of the program of the control of venereal disease, a more thorough going, complete and scientific interpretation, however, tends to aid such a program in that it places the emphasis upon the practical means for guiding the sex instinct into socially useful and constructive activities."

The committee emphasized the importance of social service, recreational facilities and measures for dealing with feeble-minded delinquents and a host of other questions.

Exhibits and demonstrations were features of the work of the conference. Included in these were the methods of the United States Hygienic Laboratory in testing salvarsan, the application of the methods of social hygiene by the Washington police, and the methods of treating venereal diseases at the United States Naval Hospital. Among the exhibits were wax models of the Army Medical Museum, showing phases of venereal disease and the social hygiene car for educational work now in use in North Carolina was brought to Washington for inspection by the delegates.

Among the 400 delegates at the conference were representatives from Argentina, Brazil, Chili, Ecuador, Cuba, Honduras, Mexico, Paraguay, Porto Rico, Canada, Czecho Slovakia, and England.

MEDICAL NOTES.

Award of Distinguished Service Medal.—A distinguished service medal has been awarded by the United States War Department to Colonel Antoine DePage, surgeon-general of the Belgian Army, for his valuable assistance to the medical officers of the American Expeditionary Forces.

Smallpox in Hayti.—A report received from Hayti on November 27 states that smallpox is epidemic there. One private in the American Marines has been sent to the hospital, and emergency tents have been erected in the belief that there will be about a dozen more cases in the brigade. Nearly five hundred native cases are being treated for smallpox in the hospitals.

Public Health Service Institute.—The recent announcement of the U. S. Public Health Service of its intention to hold an institute, at which health officers and physicians will receive ten-day intensive courses in the latest and best methods of dealing with venereal diseases is meeting with enthusiastic responses from State Boards of Health and other organizations and persons. A recent letter from the Indiana State Board says, that Indiana cannot afford to miss the Institute and will send several official representatives, supplemented by many unofficial ones. The Institute will open on November 22 for 10 days and will be immediately followed on December 6 by a six-day session of the great All-America Conference, at which the most eminent physicians, administrators, and other experts of the western hemisphere will discuss the best ways of fighting the twin diseases.

U. S. Public Health Service Hospitals and Tuberculosis.—Several of the largest general hospitals of the U. S. Public Health Service are being provided with special facilities for the diagnosis of tuberculosis and for the study of patients to determine which Public Health Service Hospital is best suited to their needs. These hospitals will become clearing houses for the diagnosis and placement of tuberculosis patients in their vicinity, especially for those with doubtful diagnosis or with complications requiring expert care. At each of them physicians skilled in this specialty will be on duty and the most modern methods will be in use. All Public Health Service Hospitals, however, are open to tuberculosis cases; and admission is never denied because of lack of special facilities. Special centers are already functioning in the Public Health Service Hospitals at Fort McHenry, Baltimore, Md.; Fox Hills, Staten

Island, New York; and Hospital 35, St. Louis, Mo. Other centers will be organized as soon as possible.

NERVOUS AND MENTAL PATIENTS IN THE MARINE HOSPITAL.—The U. S. Public Health Service will soon convene in Pittsburg a board consisting of Dr. A. J. Ostenheimer, of Philadelphia, Dr. T. Diller of Pittsburgh, and the officer in charge of the Marine Hospital to arrange for the setting aside in the hospital of a section for the diagnosis of neuropsychiatric patients from the third district of the Service, comprising the states of Pennsylvania and Delaware.

ENLARGEMENT OF HOSPITAL AT TUCSON.—The U. S. Public Health Service is enlarging its hospital at Tucson, Ariz., so as to provide for 200 more patients than it now accommodates, and for the necessary increase in hospital personnel. The enlargement is necessary to accommodate the large increase in the number of patients in this vicinity.

RECRUITING NURSES.—Owing to the impending lack of trained nurses to staff the new hospitals that are being opened by the U. S. Public Health Service, the superintendent of nurses will make an effort during her pending tour of inspection to obtain recruits to fill the vacancies. Public Health Service Hospitals exist in all parts of the country and offer opportunity for patriotic service in the care of soldiers disabled in the great war.

SPECIALIST TO VISIT TUBERCULOSIS HOSPITALS.—Surgeon-General H. S. Cumming, of the U. S. Public Health Service, is determined to see that every one of the 15,000 tuberculosis patients in the Public Service Hospitals shall have the best treatment to be had in any hospital in the land. To make sure that they shall miss nothing, he has requested a number of eminent specialists in tuberculosis, not members of the Public Health Service, to visit all service hospitals and to study the conditions at each with a view to standardization and to making any improvements that may suggest themselves. Doctors David Lyman of Wallingford, Conn., Victor Cullen of the Maryland State Sanitarium, and Martin F. Sloan of Towson, Md., will officiate in the eastern states; Dr. George Thomas Palmer, Springfield, Ohio, in the central states; and Dr. Henry Hoagland and one or two others in the southwestern states. About two weeks will be spent in each hospital.

BOSTON AND MASSACHUSETTS.

WEEK'S DEATH RATE IN BOSTON.—During the week ending January 8, 1921, the number of deaths reported was 211 against 255 last year, with a rate of 14.53 against 16.45 last year. There were 23 deaths under one year of age against 45 last year.

The number of cases of principal reportable diseases were: Diphtheria, 75; whooping cough, 14; scarlet fever, 47; typhoid fever, 2; measles, 54; tuberculosis, 50.

Included in the above were the following cases of non-residents: Diphtheria, 5; scarlet fever, 4; typhoid fever, 1; measles, 2; tuberculosis, 9.

Total deaths from these diseases were: Diphtheria, 1; scarlet fever, 4; measles, 1; tuberculosis, 12.

Included in the above were the following non-residents: Diphtheria, 1; tuberculosis, 4.

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Correspondence.

THE WINTER CLIMATE OF LUGANO.

(From our Foreign Correspondent.)
Hotel Villa Castagnola,
Lugano (Cassarate), Switzerland,
November 23, 1920.

Mr. Editor:—

I enclose the translation of an article upon the winter climate of Lugano which recently appeared in the *Zürcher Zeitung*, the leading Swiss newspaper, and hope you will find space for it in your columns, as I think it will be of interest to all physicians who are interested in climatology.

Although I have not yet passed a winter here, I have talked with numerous Swiss medical men about the climate, and with a still greater number of the laity, and, from all I have heard, I believe that this article does not exaggerate its virtues. There is certainly much more sunshine here than in most other places in Switzerland, and the air is delicious. As for the landscape, it certainly leaves little to be desired, and the beauty of the atmospheric effects must be seen to be appreciated. It is certainly a wondrously beautiful view that one gets, wherever one looks. I expect to remain here until the late spring, and so shall have opportunity to form a personal judgment concerning the climate.

Very truly yours,

Henry W. Kilburn, M.D.

Translation of an Article in the "Zürcher Zeitung" of November 12, 1920.

The spring in Canton Ticino, coming, as it does, in all its floral splendor, at a time when, on the other

side of the Gotthard, the storms of winter are still raging, is as much taken as a matter of course, and is as much glorified in poetry and prose as is the autumn, which latter season lends a peculiar beauty to the Lugano landscape; for it clothes the mountains surrounding the lake in the most varied garments, and paints the shimmering lake a sparkling blue, while on the mountains and hills, the grapes are ripening, and the noble chestnut trees are dropping their delicious fruit. It is at these two seasons of the year that Lugano is most frequented by people who need to recuperate; but it must be admitted that these guests often return home greatly disappointed because it is by no means rare for long continued periods of rainy weather to give the lie to stories about the ever blue sky of Italian Switzerland. On the other hand, Lugano is too little valued or frequented as a *winter* resort, notwithstanding the fact that it is precisely at this season of the year that the "weather" remains "settled" to an extraordinary degree, and almost never provides unpleasant surprises.

The winter climate of Lugano is highly thought of by medical authorities all over the world, and has been recommended for numerous ailments and for various conditions of exhaustion; but the fact that Lugano is little frequented during the months of December, January and February shows that the general public is insufficiently informed as to its winter climate.

The Lugano winters are preëminently distinguished for their great number of sunshiny days. Professor Ferri, the Lugano meteorologist, after 30 years of observation, has established the following as an average number of days of sunshine during the winter months:

November	12
December	17
January	17
February	17
	63

It will be seen from these figures that, on the average, every second day of winter is one of sunshine, and hence gives opportunity for outdoor air and exercise; and it is unnecessary to call attention to the great benefit this means to those who are trying to regain their strength. Incidentally, it may be remarked that no other Swiss health resort surpasses Lugano's record for sunny days. To all this may be added the mild temperature, which rarely sinks below the freezing point, and which never shows those violent changes which often render a sojourn on the Italian Riviera dangerous to invalids. The mean winter temperature is as follows:

November	43.2°
December	36.2°
January	34.3°
February	38.3°

The normal precipitation during these months ranges from 2.1 inches to 2.6 inches. Snowfalls are very rare, and fog is almost an unknown feature of Lugano's winter climate. The entire winter resembles early spring. Even though, here and there, a fall of snow occurs, it generally disappears in a few hours. The air, to be sure, is not warm and moist, like that of the tropics, but is relatively dry, and there are no annoying winds. From these Lugano is well protected by its surrounding mountains. The water of the lake is a good regulator of temperature.

All these things give Lugano's winter climate a great similarity to that of the Mediterranean coast, without the drawback of violent changes of temperature such as occur there. Hence, olive, laurel, fig and cypress trees are enabled to withstand the winter. On the cliffs of Gandria one finds the agave; and other species of plants that, elsewhere, thrive only on the shores of the Mediterranean coast, are to be found in the magnificent natural park lying between Gandria and Castagnola. In the district about Lugano, primroses bloom as early as January, and are soon followed by violets. Often as early as February, the almond trees are in full blossom, and are exquisitely beautiful; while at the same time, magnolias and camellias unfold their petals.

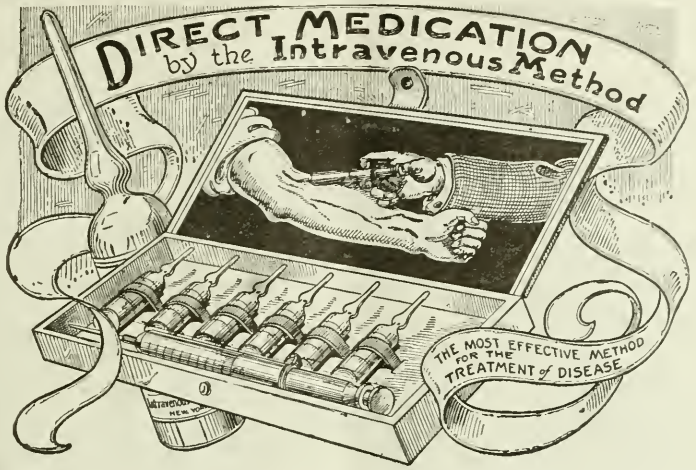
A prominent medical man, well versed in the winter climatic conditions of Lugano, says: "The Lugano winter climate possesses something of the stimulating and reviving effects of that of Meran, and something of the tranquilizing effect of that of Montreux. Upon tissue building, the appetite, food assimilation and blood making, it has a gently stimulative effect, and a tranquilizing effect upon the nervous system."

The *Bäder-Almanach*, which is published by prominent German *savants*, speaks as follows in regard to Lugano:

"The climato-therapeutic value of the winters which, as a rule, are dry and beautiful, with glorious, windless, sunny days, is, as yet, too little known and appreciated. The winter climate of Lugano is particularly suitable for the strengthening of delicate constitutions, both in youth and old age, and for convalescents and those who need to recuperate."

It is the experience of innumerable physicians that the climate of Lugano in winter has not only a recuperative effect, but a healing one. There are, as is well known, certain catarrhal conditions which require, not the dry air of the high mountains, but air that is slightly moist, like that of Lugano in winter. Other ailments for which, according to a renowned physician, the air of the Lugano winter is very well suited, are those of the heart, and all diseases accompanied by an increased blood pressure. The great number of walks with only a gentle ascent, which is to be found here, is of great assistance in these cases. Also, the food in the Lugano hotels and pensions generally includes a large proportion of vegetables, and this assists in the work of restoration.

Then, too, in diseases of the digestive organs, the mild but stimulating air has a salutary influence. After pleurisies accompanied by the formation of firm adhesions, in emphysema, and in circulatory disturbances, the most surprising results have been attained. Nervous invalids, who are fatigued by town life, and who are not seeking fashionable distraction, but rather the refreshing rest of nature, will find this climate a great recuperative force—a force which is greatly enhanced by the charm of the landscape. To everyone who has seen the winter in Lugano, it is a spectacle never to be forgotten. Down in the valley is the fresh green of the meadows and of tropical trees and plants, many of which, like the Japanese mistletoe, blossom even in the winter; and this wealth of vernal freshness is surrounded by snow-capped mountains—the Tamaro range to the west, and the dolomite peaks of the *Denti della Vecchia* to the east; while to the north, the flat summits of the Camoghè group complete an encircling rampart open only to the south. This contrast lends a peculiar charm to the winter landscape, and is a delight to the eyes of those who ascend, by dry and snow-free paths, the hills which surround the town. There is an additional charm at the hour when the last rays of the setting sun bathe in rosy light the slopes of Monte Brè, while savage Monte San Salvatore towers menacingly toward the sky, its dark mass forming a deep contrast in the picture.



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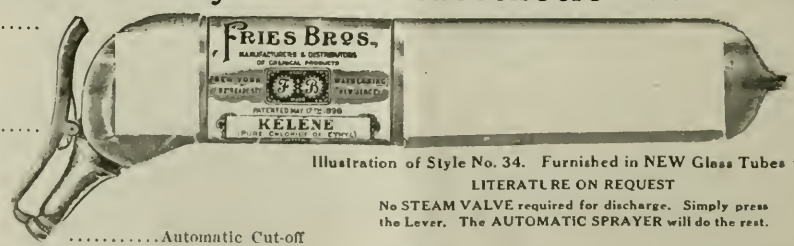

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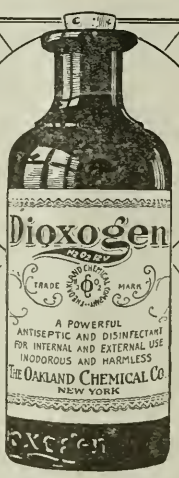

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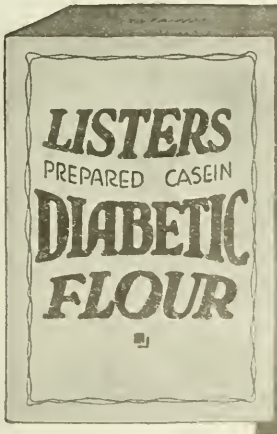

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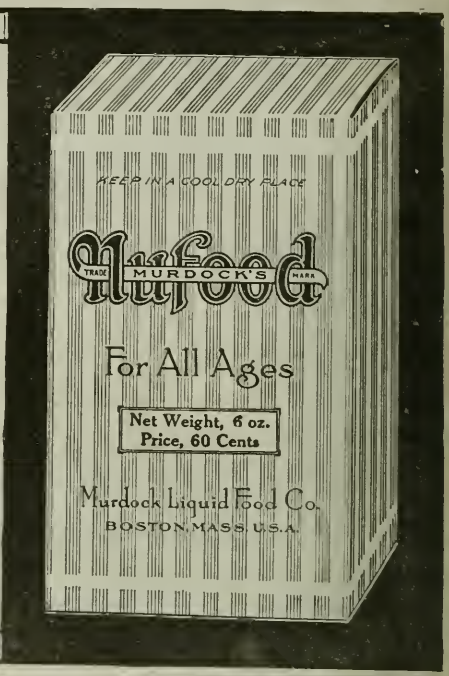

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